

Notice of Allowability

Application No.

09/880,107

Examiner

Jehanne S Sitton

Applicant(s)

HORNE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the paper mailed April 20, 2004.
2. ☒ The allowed claim(s) is/are 5-7,9-11,13,49-53,55 and 57-61.
3. ☒ The drawings filed on 14 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

JEHANNE SITTON
PRIMARY EXAMINER

Jehanne Sitton
2/11/05

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Tuscan on February 1, 2005.

The application has been amended as follows:

Please cancel claims 47 and 48.

Claim 5. (Currently amended) A method of diagnosing hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of [two] ten or more genes from Tables 3A, 3B, 5, 7A, 7B, 8A, and 8B; wherein differential expression of the genes in Tables 3A, 3B, 5, 7A, 7B, 8A, and 8B is indicative of hepatocellular carcinoma.

Claim 6. (Currently amended) A method of detecting the progression of hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of [two] ten or more genes from Tables 3A, 3B, 5, 7A, 7B, 8A, and 8B; wherein differential expression of the genes in Tables 3A, 3B, 5, 7A, 7B, 8A, and 8B is indicative of hepatocellular carcinoma progression.

Claim 7. (Currently amended) A method of monitoring the treatment of a human patient with hepatocellular carcinoma, comprising:

- (a) administering a pharmaceutical composition to the patient;
 - (b) detecting the level of expression of ten or more genes from Tables 3A, 3B, 5, 7A, 7B, 8A and 8B [preparing a gene expression profile] from a cell or tissue sample from the patient;
- and

- (c) comparing the patient gene expression [profile] detected in step (b) to [a] gene expression from a cell population comprising normal liver cells or to [a] gene expression [profile] from a cell population comprising hepatocellular carcinoma cells or both.

Claim 9. (Currently amended) A method of diagnosing a metastatic liver cancer in a human patient, comprising:

- (a) detecting the level of expression in a tissue sample of [two] ten or more genes from Tables 4A, 4B, 5, 6A, 6B, 9A and 9B; wherein differential expression of the genes in Tables 4A, 4B, 5, 6A, 6B, 9A, and 9B is indicative of metastatic liver cancer.

Claim 10. (Currently amended) A method of detecting the progression of a metastatic liver cancer in a human patient, comprising:

- (a) detecting the level of expression in a tissue sample of [two] ten or more genes from Tables 4A, 4B, 5, 6A, 6B, 9A and 9B; wherein differential expression of the genes in Tables 4A, 4B, 5, 6A, 6B, 9A, and 9B is indicative of metastatic liver cancer progression.

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Claim 11. (Currently Amended) A method of monitoring the treatment of a human patient with metastatic liver cancer, comprising:

- (a) administering a pharmaceutical composition to the patient;
 - (b) detecting the level of expression of ten or more genes from Tables 4A, 4B, 5, 6A, 6B, 9A and 9B [preparing a gene expression profile] from a cell or tissue sample from the patient;
- and
- (c) comparing the patient gene expression [profile] detected in step (b) to [a] gene expression from a cell population comprising normal liver cells or to [a] gene expression [profile] from a cell population comprising metastatic liver tumor cells or both.

Claim 13. (Currently amended) A method of differentiating metastatic liver cancer from hepatocellular carcinoma in a human patient, comprising:

- (a) detecting the level of expression in a tissue sample of [two] ten or more genes from Tables 3-9; wherein differential expression of the genes in Tables 3-9 is indicative of metastatic liver cancer rather than hepatocellular carcinoma.

Claim 51. (Currently Amended) A method of diagnosing hepatocellular carcinoma or metastatic liver cancer in a human patient comprising:

- (a) [preparing a gene expression profile] detecting the level of expression of ten or more genes from Tables 3-9 from a tissue sample from the patient; and

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(b) comparing the gene expression [profile] detected in step (a) to a database comprising part of the data in Tables 3-9; wherein differential expression of the genes detected in step (a) is indicative of hepatocellular carcinoma or metastatic liver cancer.

Claim 58. (Currently Amended) A method of diagnosing hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a liver tissue sample of [two] ten or more mRNA species from Table 3A, 3B, 5, 7A, 7B, 8A or 8B; and

(b) comparing the detected level of expression to the level of expression of said [two] ten or more mRNA species in a hepatocellular carcinoma liver tissue sample, thereby diagnosing hepatocellular carcinoma in the patient.

Claim 59. (Currently Amended) A method of diagnosing metastatic liver cancer in a human patient, comprising:

(a) detecting the level of expression in a liver tissue sample of [two] ten or more mRNA species from Table 4A, 4B, 5, 6A, 6B, 9A or 9B; and

(b) comparing the detected level of expression to the level of expression of said [two] ten or more mRNA species in a metastatic liver cancer tissue sample, thereby diagnosing metastatic liver cancer in the patient.

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Claim 60. (Currently Amended) A method of claim 58, wherein the level of expression of said [2] ten or more mRNA species in a hepatocellular carcinoma liver sample is in Table 3A, 3B, 5, 7A, 7B, 8A or 8B.

Claim 61. (Currently Amended) A method of claim 59, wherein the level of expression of said [2] ten or more mRNA species in a metastatic liver cancer sample is in Table 4A, 4B, 5, 6A, 6B, 9A or 9B.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Jehanne Sitton whose telephone number is (571) 272-0752. The examiner can normally be reached Monday-Thursday from 8:00 AM to 5:00 PM and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (571) 272-0745. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

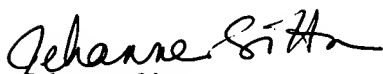
Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

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A handwritten signature in black ink, appearing to read "Jehanne Sitton". The signature is fluid and cursive, with the first name "Jehanne" being more prominent than the last name "Sitton".

Jehanne Sitton

Primary Examiner

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2/1/05